

Animal Production Portfolio: Internal Review

Portfolio 1.5B

Supporting Objective 1.5B: Contribute Science-Based Information, Analysis, and Education to Promote the Efficiency of Agricultural Production Systems (Animal Production)

CSREES Goal 1: Enhance Agricultural Opportunities for Agricultural Producers

December 5, 2006



Internal Review Portfolio Animal Production (1.5B)
(December 5, 2006)

I. BACKGROUND

- **The following knowledge areas (KAs) are included in Portfolio 1.5B:**
 - 301 REPRODUCTIVE PERFORMANCE OF ANIMALS
 - 302 NUTRIENT UTILIZATION IN ANIMALS
 - 303 GENETIC IMPROVEMENT OF ANIMALS
 - 304 ANIMAL GENOME
 - 305 ANIMAL PHYSIOLOGICAL PROCESSES
 - 306 ENVIRONMENTAL STRESS IN ANIMALS
 - 307 ANIMAL PRODUCTION MANAGEMENT SYSTEMS
 - 308 IMPROVED ANIMAL PRODUCTS (BEFORE HARVEST)
- **When the portfolio was first reviewed?** 2004
- **Portfolio score from the PREP in 2004:**

Portfolio 1.5B received an overall score of 81 from the panel in the 2004 PREP, and an overall score of 82 from the internal self-assessment team. Table I-A below shows the breakdown of scores for different questions and criteria.

| Table I-A. Scoring of 1.5B PREP Expert Panel | | | |
|---|------------------------|-----------------------|----------------------|
| Criteria | Recommendations | Previous Score | Current Score |
| Relevance | | | |
| 1. Scope | | 3 | 3 |
| 2. Focus | | 3 | 3 |
| 3. Emerging Issues | | 3 | 3 |
| 4. Integration | | 1 | 2 |
| 5. Multi-disciplinary | | 2 | 2 |
| Quality | | | |
| 1. Significance | | 2 | 2 |
| 2. Stakeholder | | 3 | 3 |
| 3. Alignment | | 3 | 3 |
| 4. Methodology | | 2 | 2 |
| Performance | | | |
| 1. Productivity | | 2 | 2 |
| 2. Comprehensiveness | | 2 | 2 |
| 3. Timeliness | | 2 | 2 |
| 4. Agency guidance | | | 2 |
| 5. Accountability | | 2 | 2 |
| Overall score | | 81 | 82 |

II. CSREES response to PREP recommendations that cross all portfolios

In response to directives from the Office of Management and Budget (OMB) of the President, CSREES implemented the Portfolio Review Expert Panel (PREP) process to systematically review its progress in achieving its mission. Since this process began in 2003, fourteen expert review panels have been convened and each has published a report offering recommendations and guidance. These external reviews occur on a

rolling five-year basis. In the four off years an internal panel is assembled to examine how well CSREES is addressing the expert panel's recommendations. These internal reports are crafted to specifically address the issues raised for a particular portfolio; however, despite the fact that the expert reports were all written independent of one another on portfolios comprised of very different subject matter, several themes common to the set of review reports have emerged. This set of issues has repeatedly been identified by expert panels and requires an agency-wide response. The agency has taken a series of steps to effectively respond to those overarching issues.

Issue 1: Getting Credit When Credit is Due

For the most part panelists were complimentary when examples showing partnerships and leveraging of funds were used. However, panelists saw a strong need for CSREES to better assert itself and its name into the reporting process. Panelists believed that principal investigators who conduct the research, education and extension activities funded by CSREES often do not highlight the contributions made by CSREES. Multiple panel reports suggested CSREES better monitor reports of its funding and ensure that the agency is properly credited. Many panelists were unaware of the breadth of CSREES activities and believe their lack of knowledge is partly a result of CSREES not receiving credit in publications and other material made possible by CSREES funding.

Issue 1: Agency Response:

To address the issue of lack of credit being given to CSREES for funded projects, the Agency implemented several efforts likely to improve this situation in 2005.

First it developed a standard paragraph about CSREES's work and funding that project managers can easily insert into documents, papers and other material funded in part or entirely by CSREES.

Second, the Agency is in the process of implementing the "One Solution" concept. One Solution will allow for the better integration, reporting and publication of CSREES material on the web. In addition, the new Plan of Work (POW), centered a logic model framework, became operational in June 2006. The logic model framework is discussed in more detail below. Because of the new POW requirements and the POW training conducted by the Office of Planning and Accountability (also described in more detail below), it will be simpler for state and local partners to line up the work they are doing with agency expenditures. This in turn will make it easier for project managers to cite CSREES contributions when appropriate.

Issue 2: Partnership with Universities

Panelists felt that the concept of partnership was not being adequately presented. Panelists saw a need for more detail to be made available. Questions revolving around long-term planning between the entities were common as were ones that asked how the CSREES mission and goals were being supported through its partnership with universities and vice versa.

Issue 2: Agency Response:

CSREES has taken several steps to strengthen its relationship with university partners. First, to the extent possible, implementing partners will be attending the CSREES strategic development exercise which is intended to help partners and CSREES fully align what is done at the local level. Second, CSREES has realigned the state assignments for its National Program Leaders (NPLs). Each state is now assigned to one specific NPL. By reducing the number of states on which any individual NPL is asked to concentrate and assigning and training NPLs for this duty, better communication between state and NPLs should occur. Finally, several trainings that focused on the POW were conducted by CSREES in geographic regions throughout the country. A major goal of this training was to better communicate CSREES goals to state leaders which will facilitate better planning between the universities and CSREES.

Issue 3: National Program Leaders

Without exception the portfolio review panels were complimentary of the work being done by NPLs. They believe NPLs have significant responsibility, are experts in the field and do a difficult job admirably.

Understanding the specific job functions of NPLs was something that helped panelists in the review process. Panelists did however mention that often times there are gaps in the assignments given to NPLs. Those gaps leave holes in programmatic coverage.

Issue 3: Agency Response:

CSREES values the substantive expertise that NPLs bring to the Agency and therefore requires all NPLs to be experts in their respective fields. Given the budget constraints often times faced by the agency, the agency has not always been able to fund needed positions and had to prioritize its hiring for open positions. In addition, because of the level of expertise CSREES requires of its NPLs, quick hires are not always possible. Often, CSREES is unable to meet the salary demands of those it wishes to hire. It is essential that position gaps not only be filled but that they be filled with the most qualified candidate.

Operating under these constraints and given inevitable staff turnover, gaps will always remain. However, establishing and drawing together multidisciplinary teams required to complete the portfolio reviews has allowed the Agency to identify gaps in program knowledge and ensure that these needs are addressed in a timely fashion. To the extent that specific gaps are mentioned by the expert panels, the urgency to fill them is heightened.

Issue 4: Integration

Lack of integration has been highlighted throughout the panel reviews. While review panelists certainly noted in their reports where they observed instances of integration, almost without fail panel reports sought more documentation in this regard.

Issue 4: Agency Response:

Complex problems require creative and integrated approaches that cut across disciplines and knowledge areas. CSREES has recognized the need for these approaches and has undertaken steps to remedy this situation. CSREES has recently mandated that up to twenty percent of all NRI funds be put aside specifically for integrated projects. These projects cut across functions as well as disciplines and ensure that future Agency work will be better integrated. Finally, integration is advanced through the portfolio process which requires cooperation across units and programmatic areas.

Issue 5: Extension

While most panels seemed satisfied at the level of discussion that focused on research, the same does not hold true for extension. There was a call for more detail and more outcome examples based upon extension activities. There was a consistent request for more detail regarding not just the activities undertaken by extension but documentation of specific results these activities achieved.

Issue 5: Agency Response:

Outcomes that come about as a result of extension are, by the very nature of the work, more difficult to document than the outcomes of a research project. CSREES has recently shuffled its strategy of assigning NPLs to serve as liaisons for states. In the past, one NPL might serve as a liaison to several states or a region comprised of states. Each state will be assigned a specific NPL and no NPL will serve as the lead representative to more than one state. This will ensure more attention is paid to extension activities.

In addition CSREES also has been in discussion with partners and they have pledged to do their best to address this issue. The new POW will make extension-based results and reporting a priority. Placing heavy emphasis on logic models by CSREES will have the effect of necessitating the inclusion of extension activities into the state's POWs. This, in turn, will require more reporting on extension activities and allow for improved documentation of extension impact.

Issue 6: Program Evaluation

Panelists were complimentary in that they saw the creation of the Office of Planning and Accountability and portfolio reviews as being the first steps towards more encompassing program evaluation work;

however, they emphasized the need to see outcomes and often stated that the scores they gave were partially the result of their own personal experiences rather than specific program outcomes documented in the portfolios. In other words, they know first hand that CSREES is having an impact but would like to see more systematic and comprehensive documentation of this impact in the reports.

Issue 6: Agency Response:

The effective management of programs is at the heart of the work conducted at CSREES and program evaluation is an essential component of effective management. In 2003 the PREP process and subsequent internal reviews were implemented. Over the past three years fourteen portfolios have been reviewed by expert panel members and each year this process improves. NPLs are now familiar with the process and the staff of the Planning and Accountability unit has implemented a systematic process for pulling together the material required for these reports.

Simply managing the process more effectively is not sufficient for raising the level of program evaluations being done on CSREES funded projects to the highest standard. Good program evaluation is a process that requires constant attention by all stakeholders and the agency has focused on building the skill sets of stakeholders in the area of program evaluation. The Office of Planning and Accountability has conducted training in the area of evaluation for both NPLs and for staff working at Land-Grant universities. This training is available electronically and the Office of Planning and Accountability will be working with NPLs to deliver training to those in the field.

The Office of Planning and Accountability is working more closely with individual programs to ensure successful evaluations are developed, implemented and the data analyzed. Senior leadership at CSREES has begun to embrace program evaluation and over the coming years CSREES expects to see state leaders and project directors more effectively report on the outcomes of their programs as they begin to implement more rigorous program evaluation. The new POW system ensures data needed for good program evaluation will be available in the future.

Issue 7: Logic Models

Panelists were consistently impressed with the logic models and the range of their potential applications. They expressed the desire to see the logic model process used by all projects funded by CSREES and hoped not only would NPLs continue to use them in their work but, also, that those conducting the research and implementing extension activities would begin to incorporate them into their work plans.

Issue 7: Agency Response:

Logic models have become a staple of the work being done at CSREES and the Agency has been proactive in promoting the use of logic models to its state partners. Two recent initiatives highlight this. First, in 2005, the POW reporting system into which states submit descriptions of their accomplishments was completely revamped. The new reporting system now closely matches the logic models being used in portfolio reports. Beginning in fiscal year 2007, states will be required to enter all of the following components of a standard logic model. These components include describing the following:

- Program Situation
- Program Assumption
- Program Long Term Goals
- Program Inputs which include both monetary and staffing
- Program Output which include such things as patents
- Short Term Outcome Goals
- Medium Term Outcome Goals
- Long Term Outcome Goals
- External Factors
- Target Audience

The system is now operational and states were required to begin using it by June of 2006. By requiring the inclusion of the data components listed above states are in essence, creating a logic model that CSREES believes will help improve both program management and outcome reporting. Please note a sample logic model has been included in Appendix A.

The second recent initiative by CSREES regarding logic models concerns a set of training sessions conducted by Planning and Accountability staff. In October and November of 2005 four separate training sessions were held in Monterrey, California, Lincoln, Nebraska, Washington D.C. and Charleston, South Carolina. More than 200 people representing land-grant universities attended these sessions where they were given training in logic model creation, program planning, and evaluation. In addition, two training sessions were provided to NPLs in December 2005 and January 2006 to further familiarize them with the logic model process. Ultimately it is hoped these representatives will pass on to others in the Land-Grant system what they learned about logic models thus creating a network of individuals utilizing the same general approach to strategic planning. These materials also have been made available to the public on the CSREES website.

III. RESPONSE TO PREP RECOMMENDATIONS REGARDING PORTFOLIO 1.5B

Strategic Planning and Performance Leadership

The review team for both the animal production and animal protection portfolio reviews recommended that the Animal Systems Team develop a strategic plan for the combined portfolios and that plan be linked to performance tracking and evaluation of these portfolios.

The portfolio review process reinforced the need and value for strategic alignment of programs with broader goals and objectives of the department and the agency to address critical national needs. The Animal Systems Team believes that strategic planning is a key element of effective operations and management. The program leadership of the Animal Systems Team takes formal responsibility for strategic planning, which is a priority activity.

The Animal Systems Team has initiated steps to develop an Animal Systems Roadmap that will serve as both a strategic plan as well as a performance plan. The Roadmap will be used to develop a shared vision, goals, and objectives, and will help to provide direction for the programs represented in the portfolios. The performance tracking and program evaluation efforts for these portfolios would be linked to the Roadmap as well as the CSREES strategic plan. Performance deficits will be identified as well as strategies to correct these deficits. The agency's strategic plan as well as portfolio reviews and self studies will serve as the baseline and starting point for the Roadmap.

The strategic plan will be a visionary, conceptual and directional document, which will serve as a framework for making decisions, provide the basis for our performance plan, and will be used as an information piece to explain our work to others especially those outside our organization—in order to inform, motivate and involve them. The plan will be developed through an inclusive, participatory process in which the Animal Systems Team at all levels will take on shared responsibility and ownership. It will be based on a shared vision that is value-driven and leads to targeted action. Specific goals and objectives within the strategic plan will allow for performance measures and benchmarking that will help the team in its overall self assessment and planning to identify key strengths, weaknesses, and competencies of the portfolios.

The performance plan will be a tactical, focused, document that describes executable and measurable activities that are to be undertaken to help the Team achieve the goals and objectives described in the strategic plan. All of the goals, objectives, and activities will be directly aligned with the goals and vision of the agency.

Through our strategic planning process, we will be able to identify opportunities and potential gaps, which in turn help the team will help the team to more effectively allocate limited resources, enhance performance, and enhance the service we provide to our partners and stakeholders. We will routinely monitor and review our progress and revise our strategic direction as appropriate.

Performance Tracking

Both portfolio review reports indicated a need to improve performance tracking and accountability documentation for the two portfolios. The Animal Systems Team also recognized this need in the preparation of the self studies prior to both portfolio reviews.

The Animal Systems Team has developed a process to enhance performance tracking on an annual basis for both portfolios. The Team will develop an Annual Performance Report for the Animal Production and Protection portfolios to enhance performance tracking of both portfolios.

The report will serve as the basis for the annual self assessments of these portfolios and will improve the efficiency of conducting the 5-year external review of both portfolios. This report will indicate program shifts, resource trends, highlighted accomplishments, and impacts by each knowledge area. The process will serve as a valuable tool from a program leadership perspective in enhancing the quality, relevancy and performance of the diverse portfolios managed and led by the Animal Systems Team.

The Annual Performance Report should serve the needs of both the program leadership and the planning/accountability functions of the agency. Annual reporting will help assure that programs are aligned with the agency's strategic goals and address critical national needs. The annual report will also help to demonstrate how we make a difference by documenting program accomplishments and impacts. The process will optimize the time and effort of NPLs and program specialists in achieving our performance leadership goals. The annual performance reporting will be integrated into the team's regular business/performance management cycle allowing for a more orderly approach to program planning and performance tracking. Emphasis will be placed on improving performance through enhanced performance leadership.

The Animal Systems Team believes that performance evaluation is important in terms of our program leadership function and will help to address performance deficits.

ARS and CSREES Program Planning and Stakeholder Interactions

The Animal Systems Team clearly recognizes the importance of enhanced integration of the CSREES and ARS programs in Animal Production and Protection. CSREES and ARS jointly sponsored two major national stakeholder workshops for animal production and protection since the portfolio reviews were conducted. These workshops are part of the ARS 5-year performance planning and management cycle, and are now part of the CSREES performance planning cycle. These joint workshops will greatly enhance the integration of ARS and CSREES programs consistent with the needs of diverse stakeholders. These workshops help to ensure the relevancy of major research programs of both agencies. Linked to other performance planning and tracking efforts of the Animal Systems Team, these efforts should enhance the quality and performance of programs within both portfolios. Stakeholders have been supportive of these workshops and the fact that CSREES and ARS are engaged in joint program planning and stakeholder interaction.

Improve Integration Among Knowledge Areas

The Animal Systems Team is moving forward in terms of program integration by aligning goals and objectives for each knowledge area within the Animal Systems portfolios with goals and objectives in the broader agency strategic plan. The team continues to move toward a systems-based approach to program planning, delivery, and performance tracking. Significant progress continues in integrating the competitive grants portfolio with other programs by building a strong team across units (Competitive Programs and Plant and Animal Systems). The team will continue to focus on integration of programs in terms of biological systems as well as commodity/species based production systems. As mentioned above, the team also is taking major steps to enhance integration with ARS and other federal agencies.

The Animal Systems Team recognizes that Planning and Accountability has defined portfolios based on the aggregation of knowledge areas used for tracking projects and expenditures. Use of these knowledge areas in reporting performance across program areas does result in biases from a review and assessment perspective. Programs and projects are actually more integrated across knowledge areas.

Lack of Measurable Outcomes and Impacts

The Animal Systems Team concurs with this observation; however, this is a broad systemic problem across the agency. Improved reporting systems for extension and higher education integrated with the research reporting that provides measurable outcomes and impacts are needed. The agency is moving forward to address this issue regarding reporting needs and systems.

The Animal Systems Team recognizes that there need to be new approaches and visionary thinking regarding the tracking of outcomes and impacts. There is a need to focus on performance reports instead of activity reports. Current systems being discussed within the agency are project-based reporting systems. Most reportable impacts occur well after projects are terminated and are not based on inputs from a single project. The agency needs to consider new models for performance tracking and impact documentation.

Improved Integration of Research, Extension, Higher Education

The Animal Systems Team is aware of the need to do a better job of integrating our research and extension portfolios along with higher education. This opportunity presents challenges as the majority of our extension efforts are being funded through formula funds with little ability to track specific efforts related to extension efforts in Animal Systems. This is true for all formula-based extension programs. Integration is occurring primarily at the state level. As stated above, the agency is moving forward to address this issue in terms of accountability and performance tracking.

Regarding integration with higher education programs, the team is engaged in many of the programs within the higher education portfolio. It should be noted that the programs within the higher education portfolio of the agency do not contain major investments in undergraduate education. The team recognizes the critical need for and importance of undergraduate education; however, even though the agency tracks undergraduate enrollment in agriculture, the agency does not have a significant investment or a portfolio of programs in support of undergraduate education. Thus, calls for greater integration of research programs with undergraduate education programs must be placed in perspective and in the context of the CSREES federal investment.

Integration with Other Portfolios

The team is well aware of the need to assure broader programmatic integration with KAs in other portfolios. The team will highlight activities that demonstrate this integration and identify areas for improved integration across the agency in future reports and action.

Improved Leadership for the Extension Function

Although not explicit, the review team indicated that there is a need to enhance the agency's roles in terms of leadership for the extension function within the Animal Systems portfolio. The team is addressing opportunities to strengthen leadership for the extension function. NPLs are being asked to report accomplishments and describe their leadership roles for research and extension functions. The team will assess opportunities to strengthen leadership relative to extension programming.

NPLs within the team network extensively with extension counterparts in the states. Meetings with extension specialists and special sessions on extension programs are held in conjunction with professional meetings and national workshops. The team will integrate extension goals into performance planning and leadership functions; however, as mentioned above, there are still major deficiencies in terms of reporting extension accomplishments and impacts. These deficiencies must be resolved at the agency level.

Vision and Forward Thinking

The review report indicated that the objectives described in the review documents utilize language of 10 years ago. Further the team recommended that the "portfolio needs to focus on economic, sociological, and global opportunities for producers as stated in the strategic plan, and get beyond the 'cheap food' mindset."

The team agrees with this finding. These deficiencies will be addressed in the development of the Roadmap and the Annual Performance Report.

IV. SUMMARY OF UPDATES TO THE 2004 PORTFOLIO REVIEW REPORT

In preparation for the animal production self-assessment, the Animal Production Team compiled a 2006 Animal Production Annual Performance Report. This report is based on the 2004 Portfolio Review Report and presents updated information on the following sections: KA Situation, KA Investments, KA Program Shifts, KA Research-Extension Highlights, KA Impact Highlights, and KA Logic Models. General animal production information was also updated such as: Responses to External Panel Recommendations, list of Peer-Panels, list of Congressionally Directed Line Items within Animal Systems, list of Multi-State Committees within Animal Protection, and information regarding Principal Investigator and Stakeholder Workshops with CSREES animal production involvement. Listed below are selected funding tables and logic models.

TABLE IV-A: Number of Research Projects by Knowledge Area for Animal Production

| Portfolio | Knowledge Area | Number of Active Projects | | |
|-------------------|---|---------------------------|------|------|
| | | 2003 | 2004 | 2005 |
| Animal Production | 301 - Reproductive Performance of Animals | 471 | 456 | 454 |
| | 302 - Nutrient Utilization in Animals | 484 | 476 | 494 |
| | 303 - Genetic Improvement of Animals | 288 | 292 | 292 |
| | 304 - Animal Genome | 216 | 248 | 261 |
| | 305 - Animal Physiological Processes | 448 | 434 | 430 |

| | | | |
|---|-----|-----|-----|
| 306 - Environmental Stress in Animals | 149 | 159 | 150 |
| 307 - Animal Production Management Systems | 404 | 425 | 465 |
| 308 - Improved Animal Products (Before Harvest) | 146 | 145 | 147 |

TABLE IV-B: CSREES Funding by Knowledge Area for Animal Production

| Portfolio | Knowledge Area | Fiscal Year (\$ in thousands) | | |
|-------------------|---|----------------------------------|---------------|---------------|
| | | 2003 | 2004 | 2005 |
| Animal Production | 301 - Reproductive Performance of Animals | 14,916 | 14,362 | 15,811 |
| | 302 - Nutrient Utilization in Animals | 13,320 | 14,167 | 14,558 |
| | 303 - Genetic Improvement of Animals | 8,821 | 8,411 | 10,235 |
| | 304 - Animal Genome | 5,825 | 15,285 | 12,609 |
| | 305 - Animal Physiological Processes | 11,402 | 8,632 | 9,595 |
| | 306 - Environmental Stress in Animals | 1,359 | 2,163 | 2,248 |
| | 307 - Animal Production Management Systems | 13,138 | 13,218 | 13,726 |
| | 308 - Improved Animal Products (Before Harvest) | 1,882 | 2,624 | 3,005 |
| | Total | 70,663 | 78,862 | 81,787 |

TABLE IV-C: CSREES Funding for Animal Production by Source

| Funding Source | Fiscal Year (\$ in thousands) | | |
|--------------------|----------------------------------|--------|--------|
| | 2003 | 2004 | 2005 |
| HATCH | 27,974 | 29,206 | 28,953 |
| Mc-Stn | 202 | 103 | 67 |
| Evans Allen | 7,686 | 8,405 | 8,512 |
| 1433 Animal Health | 692 | 425 | 571 |
| Special Grants | 10,870 | 11,083 | 10,535 |
| NRI Grants | 14,904 | 21,899 | 22,026 |
| SBIR Grants | 2,308 | 740 | 1,612 |

| | | | |
|---------------------|---------------|---------------|---------------|
| Other CSREES | 6,028 | 7,003 | 9,511 |
| Total CSREES | 70,664 | 78,864 | 81,787 |

TABLE IV-D: Funding From All Sources for Animal Production

| Funding Source | Fiscal Year (\$ <i>in thousands</i>) | | |
|--------------------------------|--|----------------|----------------|
| | 2003 | 2004 | 2005 |
| CSREES | 70,663 | 78,863 | 81,787 |
| Other USDA | 5,538 | 6,536 | 11,773 |
| Other Federal | 39,185 | 43,254 | 92,121 |
| State Appropriations | 148,742 | 144,104 | 175,172 |
| Self Generated | 37,716 | 40,898 | 53,643 |
| Industry/Grants and Agreements | 22,314 | 27,714 | 28,352 |
| Other Non-Federal | 12,499 | 14,319 | 22,833 |
| Total | 336,657 | 355,688 | 465,680 |
| CSREES as % of Total | 21% | 22% | 18% |

TABLE IV-E: Commodity Support by Funding Source for Animal Production

| Year | Funding Source | Commodity (\$ <i>in thousands</i>) | | | | | | | |
|-------------|----------------------|-------------------------------------|--------|--------|--------|-------|--------|---------|--------|
| | | Poultry | Beef | Dairy | Swine | Sheep | Equine | Aquatic | Other |
| 2003 | CSREES | 6,802 | 12,795 | 11,286 | 7,337 | 2,974 | 1,165 | 15,067 | 8,721 |
| | Other USDA | 741 | 966 | 1,365 | 1,008 | 274 | 79 | 141 | 532 |
| | Other Federal | 3,031 | 2,745 | 3,143 | 2,259 | 1,135 | 320 | 2,544 | 16,996 |
| | State Appropriations | 18,186 | 33,455 | 34,181 | 17,904 | 5,105 | 4,788 | 7,099 | 17,110 |
| 2004 | CSREES | 8,169 | 12,778 | 15,450 | 10,167 | 3,213 | 1,741 | 12,608 | 10,196 |
| | Other USDA | 1,221 | 1,159 | 1,727 | 758 | 195 | 28 | 331 | 683 |

| | | | | | | | | | |
|-------------|----------------------|--------|--------|--------|--------|-------|-------|--------|--------|
| | Other Federal | 2,966 | 2,371 | 3,675 | 2,252 | 1,020 | 87 | 2,100 | 16,837 |
| | State Appropriations | 18,824 | 32,726 | 32,104 | 16,677 | 4,502 | 4,191 | 6,875 | 17,923 |
| 2005 | CSREES | 10,774 | 13,232 | 11,607 | 10,033 | 7,139 | 728 | 14,737 | 9,745 |
| | Other USDA | 1,263 | 1,992 | 1,752 | 1,641 | 465 | 83 | 2,236 | 1,808 |
| | Other Federal | 3,485 | 2,861 | 4,657 | 4,083 | 2,170 | 1,036 | 8,791 | 48,066 |
| | State Appropriations | 18,555 | 37,916 | 33,750 | 19,243 | 6,244 | 5,629 | 10,943 | 28,838 |

TABLE IV-F: Commodity Support by CSREES Funding Source for Animal Production

| | | Commodity (\$ <i>in thousands</i>) | | | | | | | |
|-------------|--------------------|-------------------------------------|-------|-------|-------|-------|--------|---------|-------|
| Year | Funding Source | Poultry | Beef | Dairy | Swine | Sheep | Equine | Aquatic | Other |
| 2003 | HATCH | 4,183 | 6,318 | 6,972 | 3,240 | 1,467 | 630 | 1,124 | 2,209 |
| | Mc-Stn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Evans Allen | 256 | 206 | 258 | 1,284 | 160 | 0 | 1,707 | 3,310 |
| | 1433 Animal Health | 119 | 104 | 98 | 167 | 22 | 106 | 3 | 60 |
| | Special Grants | 527 | 3,357 | 900 | 453 | 948 | 79 | 2,828 | 675 |
| | NRI Grants | 1,127 | 2,453 | 3,057 | 2,117 | 237 | 350 | 3,146 | 1,834 |

| | | | | | | | | | |
|-------------|--------------------|-------|-------|-------|-------|-------|-----|-------|-------|
| | SBIR Grants | 596 | 148 | 0 | 75 | 0 | 0 | 1,346 | 0 |
| | Other CSREES | 0 | 208 | 0 | 0 | 140 | 0 | 4,913 | 631 |
| 2004 | HATCH | 4,174 | 5,647 | 7,794 | 3,718 | 1,616 | 680 | 1,151 | 2,272 |
| | Mc-Stn | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Evans Allen | 357 | 140 | 168 | 1,697 | 0 | 0 | 1,958 | 3,668 |
| | 1433 Animal Health | 80 | 93 | 101 | 22 | 31 | 39 | 0 | 49 |
| | Special Grants | 578 | 2,900 | 1,265 | 965 | 967 | 71 | 2,687 | 640 |
| | NRI Grants | 2,595 | 3,657 | 5,765 | 3,761 | 402 | 953 | 1,830 | 2,268 |
| | SBIR Grants | 80 | 40 | 40 | 0 | 0 | 0 | 285 | 296 |
| | Other CSREES | 305 | 295 | 318 | 3 | 197 | 0 | 4,697 | 987 |
| 2005 | HATCH | 4,423 | 5,698 | 7,623 | 3,819 | 1,526 | 669 | 1,383 | 2,291 |
| | Mc-Stn | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Evans Allen | 462 | 135 | 0 | 2,172 | 205 | 0 | 2,071 | 2,847 |
| | 1433 Animal Health | 59 | 120 | 147 | 62 | 26 | 25 | 0 | 120 |
| | Special Grants | 748 | 3,098 | 1,001 | 433 | 956 | 21 | 2,602 | 730 |
| | NRI Grants | 4,681 | 3,600 | 1,917 | 3,171 | 3,724 | 12 | 1,989 | 2,268 |
| | SBIR Grants | 396 | 80 | 0 | 0 | 0 | 0 | 1,016 | 253 |
| | Other CSREES | 6 | 493 | 920 | 377 | 701 | 0 | 5,674 | 1,237 |

TABLE IV-G: Scientist Year (SY) and Other Personnel Year (OY) Effort for Animal Production

| Year Type | Fiscal Year | | |
|--------------|----------------|----------------|----------------|
| | 2003 | 2004 | 2005 |
| SYS | 702.6 | 677.7 | 949.9 |
| OYS | 2,863.1 | 2,768.7 | 3,650.2 |
| Total | 3,565.7 | 3,446.4 | 4,600.1 |

V. 2006 SCORE CHANGES FOR 1.5B PORTFOLIO

The 1.5B portfolio internal review team has changed the following scores from 2004 as follows:

1.4 Integration

PREP Score: 1

Revised Score: 2

Justification for self-score increase:

The Animal Systems Team is moving forward in terms of program integration by aligning goals and objectives for each knowledge area within the Animal Systems portfolios with goals and objectives in the broader agency strategic plan. The team continues to move toward a systems-based approach to program planning, delivery, and performance tracking. Significant progress continues in integrating the competitive grants portfolio with other programs by building a strong team across units (CP and PAS). The team will continue to focus on integration of programs in terms of biological systems as well as commodity/species based production systems. The team is also taking major steps to enhance integration with ARS and other federal agencies.

Within the animal production portfolio, the functional integration of CSREES mission areas of research, education, and extension within and across main funding categories of formula funds, competitive awards, and others is now evident. Numerous Hatch projects being carried out under the animal production portfolio have taken an integrated approach to address issues important for animal production. For example, taking an integrated approach to research and outreach, investigators at University of Kentucky (*CRIS Accession Number 0182278*) have developed dietary protein-based growth prediction models for the livestock industry. The application of such findings has the potential to increase economic gain of \$6 million/year in Kentucky from the sale of weanling calves.

Members of a multi-state committee (*NC-1006: Methods to increase reproductive efficiency in cattle*; NIMMS database www.lgu.umd.edu) have addressed the problem of reduced fertility in dairy cows via a research and application approach. This multi-state committee can be considered as a “model” of integrative work under all three integration objectives. Unique management practices and hormonal treatments were developed and applied to synchronize ovulation and timed artificial insemination in beef and dairy cattle. Over 1000 producers, veterinarians, and county/state extension workers were trained for such new methodologies through several workshops. The value of this technology is estimated to save beef and dairy producers in the United States ~\$1 billion per year.

The National Research Initiative (NRI) has the authority to fund up to 20% of its annual budget as integrated projects. There is an increased number of relevant NRI programs that have included integrated priorities in the annual request for applications, including 43.0 Animal Genome: Applied Animal Genomics; 41.0 Animal Reproduction; and 42.0 Animal Growth and Nutrient Utilization. Projects submitted to these programs now combine at least two of the three research, education, and extension/outreach objectives. The NRI Animal Production Program made its first integrated project award in FY05 and anticipates to making its second integrated project award in FY06. The NRI Animal Growth and Nutrient Utilization Program has demonstrated a “marked increase” in integrated proposals received for FY06 competition. For fiscal year 2006, NRI reinforced this component at several workshops and multi-state research meetings and to potential end users for submission of integrated proposals. One such workshop was organized jointly by the CSREES and ARS in April of 2006. Review panels in 2006 will have special instructions for evaluating the integrated proposals.

Integration of research, education, and outreach has become a strong focus of higher education programs offered through CSREES. For example, competitive applications solicited under *the Food and Agricultural Sciences National Needs Graduate and Postdoctoral Fellowship Grants Program* identified “Agricultural Genomics and Bioinformatics” as one of its six targeted expertise shortage areas in FY06 RFA. Successful proposals will be the ones that will include a well-integrated approach towards fundamental sciences, tools, resources and applicability while training graduate students and postdocs.

Efforts are underway to develop an integrated animal genetics “road map.” A USDA taskforce consisting of members from CSREES, ARS and partner scientists is charged to develop a unifying and prioritized animal genetics approach based on research, education and extension components.

The National Extension Poultry Workshop is held annually at the Poultry Science Association Annual Meeting. Topics included cutting edge technology relative to current events, extension concepts, industry feedback on various issues, and current/general topics of interest. During the combined animal science related meetings held every four years, the workshop addresses issues for all the animal, dairy and poultry systems.

Based on these examples of improved integration, the score was changed from “1” to “2”, (i.e., moderately integrated).

3.4 Agency Guidance

PREP Score: no score provided

Revised Score: 2

Justification for self-score increase:

The portfolio continues to provide dynamic leadership and management to foster a broad spectrum of activities to develop human resources and collaborative interaction among all three mission areas. As no score was originally provided in 2004 by PREP, a score of “2” was given during the 2006 self-scoring session.

VI. SUMMARY

The self-assessment team, consisting of NPLs and staff of the Animal Systems and Competitive Programs sections, was satisfied based on the consensus-based self-scoring exercise of the Animal Production portfolio. The team is committed to continuing these exercises while moving toward future goals.

One of the recurring themes throughout the expert panel’s recommendations was the lack of reporting structure for extension/outreach and education activities/accomplishments. The team recognizes this deficiency and will work within the agency toward better reporting mechanisms for these activities. The team will increase efforts to include extension/outreach and education accomplishments in portfolio documents by ensuring higher-quality CRIS reporting, and utilizing accomplishments highlighted in Plans of Work. The team realizes this is an ongoing process. It is the team’s expectation that efforts will be enhanced in areas where improvements are needed. The Animal Systems Team response to the PREP recommendations also addresses these issues.